REMARKS

Claims 1-22, all the claims pending in the application, stand rejected on prior art grounds. Claims 1-14 stand rejected under 35 U.S.C. §101. Moreover, the drawings are objected to. Accordingly, claims 1, 8, 15, and 22 are amended as well as the drawings. Applicants respectfully traverse these rejections based on the following discussion.

I.   The Objections to the Drawings

The drawings are objected to because Figures 1 through 2(P) are required to include a legend, such as "Prior Art". Accordingly, the drawings are amended (as replacement sheets) and submitted herewith with the designation "Prior Art" associated with Figures 1 through 2(P). In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this objection.

II.   The 35 U.S.C. §101 Rejection

Claims 1-14 stand rejected under 35 U.S.C. §101 because, according to the Office Action, the claimed invention of claims 1 and 8 do not appear to recite a tangible result. These rejections are traversed as explained below. Claims 1 and 8 are amended to recite, respectively, "using the determined word to check a correct spelling of a tapped word entry corresponding to said inputted sequence of said landing points" and "using the selected word to check a correct spelling of a tapped word entry corresponding to said inputted sequence of tapped landing points." Such language clearly provides a tangible result of providing a spell checker to

determine if the sequence of tapped entries corresponds to a recognizable word (i.e., a word that is spelled correctly). In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

III.   The Prior Art Rejections

Claims 1-7 and 15-22 stand rejected under 35 U.S.C. §102(b) as being anticipated by C.C. Tappert ("Speed, Accuracy, Flexibility Trade-Offs in On-Line Character Recognition," IBM Research Division, 10/28/87), hereinafter referred to as Tappert. Claims 8-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Edwin (WIPO WO 2004/079557A1), in view of Tappert. Applicants respectfully traverse these rejections based on the following discussion.

The claimed invention, as provided in amended independent claims 1, 8, 15, and 22 contain features, which are patentably distinguishable from the prior art references of record. Specifically, claim 1 recites, "method of relaxing typing accuracy on a computer keyboard comprising alphanumeric keys and a spacebar key, said method comprising: recording a coordinate of a landing point corresponding to a sequence of tapped keys on said computer keyboard; counting a total number of landing points tapped only after verification that said spacebar key has been tapped during said sequence; comparing a geometric pattern formed by an inputted sequence of said landing points to a pattern formed by lexical entry of sequences, wherein said lexical entry of sequences comprises a subset of sequences comprising sequences having an amount of letters equaling said total number; calculating a distance between said geometric pattern and the pattern formed by letters corresponding to said lexical entry of

sequences; determining a word by selecting a shortest distance between said inputted sequence of <u>said landing</u> points and letters corresponding to said lexical entry of sequences<u>; and using the determined word to check a correct spelling of a tapped word entry corresponding to said inputted sequence of said landing points.</u>"

Claim 8 recites, "A method of relaxing typing accuracy <u>on a computer keyboard comprising alphanumeric keys and a spacebar key</u>, said method comprising: recording a coordinate of at least one keystroke landing point, wherein said keystroke emanates from tapping a key on a keyboard; counting <u>a total</u> amount of tapped landing points <u>only after verification that said spacebar key has been tapped during an inputted sequence of tapped landing points</u>; creating a set of words from a lexicon having a same number of said tapped landing points; for each letter in each word in said set, computing a distance from said coordinate to a central position of said key corresponding to said letter; summing a total distance for each word; and selecting a word from said set having a shortest total distance to said coordinate<u>; and using the selected word to check a correct spelling of a tapped word entry corresponding to said inputted sequence of tapped landing points.</u>"

Claim 15 recites "A system of relaxing typing accuracy <u>on a computer keyboard comprising alphanumeric keys and a spacebar key, said system</u> comprising: <u>a recorder configured to record a coordinate of a landing point corresponding to a sequence of tapped keys on said computer keyboard; a counter configured to count a total number of landing points tapped only after verification that said spacebar key has been tapped during said sequence;</u> a comparing module configured to compare an inputted sequence of <u>said landing</u> points to a pattern formed by lexical entry of sequences<u>, wherein said lexical entry of sequences comprises a</u>

subset of sequences comprising sequences having an amount of letters equaling said total

number; a calculator configured to calculate a distance between said inputted sequence of points

and letters corresponding to said lexical entry of sequences; a determining module configured to

determine a word by selecting a shortest distance between said inputted sequence of said landing

points and letters corresponding to said lexical entry of sequences; and a spell checker

configured to use the determined word to check a correct spelling of a tapped word entry

corresponding to said inputted sequence of said landing points."

Claim 22 recites, "A system of relaxing typing accuracy on a computer keyboard

comprising alphanumeric keys and a spacebar key, said system comprising: means for recording

a coordinate of a landing point corresponding to a sequence of tapped keys on said computer

keyboard; means for counting a total number of landing points tapped only after verification that

said spacebar key has been tapped during said sequence; means for comparing a geometric

pattern formed by an inputted sequence of said landing points to a pattern formed by lexical

entry of sequences, wherein said lexical entry of sequences comprises a subset of sequences

comprising sequences having an amount of letters equaling said total number; means for

calculating a distance between said geometric pattern and the pattern formed by letters

corresponding to said lexical entry of sequences; means for determining a word by selecting a

shortest distance between said inputted sequence of said landing points and letters corresponding

to said lexical entry of sequences; and means for using the determined word to check a correct

spelling of a tapped word entry corresponding to said inputted sequence of said landing points."

Support of the above amended language is found in the Applicants' specification, as

originally filed, pages 10-13 and 17-19 as well as Figures 3 and 4. Neither Tappert or Tappert

combined with Edwin specifically teach or reasonably suggest "counting a total number of landing points tapped only after verification that said spacebar key has been tapped during said sequence" or "wherein said lexical entry of sequences comprises a subset of sequences comprising sequences having an amount of letters equaling said total number." Absent such a teaching or suggestion, the Applicants' claimed invention is patentable over Tappert or Tappert combined with Edwin as 35 U.S.C. §102(b) requires that every aspect of the Applicants' claimed invention must be taught in the prior art to sustain a rejection and 35 U.S.C. §103(a) requires that every aspect of the Applicants' claimed invention must be reasonably taught or suggested in the combination of the prior art references of record. Here, as noted above, the prior art lacks all of the elements of the Applicants' claimed invention either through an explicit teaching/suggestion or an implicit teaching/suggestion, and, as such, the Applicants' claimed invention is patentable over the prior art references of record.

Page 4 of the Office Action states that page 3, lines 29-32 of Tappert teaches the Applicants' "wherein said distance is a mean distance of all inputted sequence of points." However, closer review of the cited section of Tappert reveals no such teaching. Rather, page 3, lines 29-32 of Tappert merely states, "*Smoothing* was performed by averaging a point with its neighbors, a technique often used.... A frequently used technique is one which averages a point with only previous points, so that the computation can be performed as each point is received.... The form of smoothing used here replaced a point with a symmetric, weighted average of its neighbors...." Thus, Tappert merely teaches using only a portion of the overall points to generate its "smoothing" rather than all of the points. In other words, the Applicants calculate a mean distance of all inputted points, whereas Tappert either only averages a point with those

points immediately near it (i.e., neighbors), or with only previous points, or using a weighted average of neighbor points, which is mathematically distinct from a "mean distance of all … points." Accordingly, Tappert fails to teach the Applicants' "wherein said distance is a mean distance of all inputted sequence of points." Therefore, the Applicants' claimed invention is patentable over Tappert.

Page 5 of the Office Action states that page 5, lines 35-36 of Tappert teaches the Applicants' "normalizing said elastic matching distance by an amount of letters in said word." However, closer scrutiny of the cited section of Tappert reveals no such teaching. Rather, page 5, lines 35-36 of Tappert merely states, "The normalization of the x and y offsets was such that the y difference of the box height, corresponding roughly to the height of most characters…." It appears that merely a keyword search has been conducted to search for "normalization" and once found, irrespective of the context of how the word is used or what specifically is taught, the Office Action concludes that the prior art reference, Tappert, teaches the Applicants' claimed invention. It is clear that Tappert does not normalize the elastic matching distance by an amount of (i.e., number of) letters in a word, but rather that only a portion of the elastic matching distance (i.e., the y offset difference in the box height) corresponds to a height of the characters in the box (see page 5, lines 4-10 for a description of how Tappert uses a box as a manner of reducing data to single data points). Clearly, Tappert says nothing about normalizing the elastic matching distance by an amount of letters in a word as provided by the Applicants' claimed invention, and as such, the Applicants' claimed invention is patentable over Tappert.

Next, page 5 of the Office Action cites page 7, lines 2-5 of Tappert as teaching both "outputting said word if said shortest total distance is smaller than said predetermined threshold

distance" and "outputting said letters tapped if said shortest total distance is greater than said predetermined threshold distance." Further review of Tappert reveals no such teaching. In fact, page 7, lines 2-5 of Tappert merely states, "Specifically, if a character was not recognized correctly or if an incorrect second choice was close to a correct first choice (the ratio of the elastic matching score of the second choice to the first was less than a specified threshold), then that character was added to the prototype set." It is clear from the above language of Tappert that Tappert does not provide a teaching of the circumstance when the ratio is <u>greater than</u> the specified threshold, therefore Tappert cannot possibly teach the Applicants' claimed "outputting letters tapped if said shortest distance is greater than said predetermined threshold distance." Additionally, Tappert clearly indicates that it is comparing a ratio of the elastic matching score of a second choice to a first choice of recognized characters, whereas in the Applicants' claimed invention only "the shortest total distance" is compared with the "predetermined threshold distance" (i.e., there are no ratios involved in the Applicants' "shortest total distance"). Hence, the Applicants' claimed invention is patentable over Tappert.

Page 8 of the Office Action states that page 26, lines 5-7 of Edwin recites an analogous teaching of the Applicants' "counting an amount of tapped landing points." Page 26, lines 5-7 of Edwin states, "To make the matching routine more efficient, the detection regions are stored in the order of the most commonly scribed character to the least commonly scribed character." Nothing in this language of Edwin remotely suggests "counting an amount of tapped landing points." Therefore, there is no plausible basis for the Office Action to conclude that such a teaching is analogous to the Applicants' claimed invention. Clearly, Edwin only creates a list of the detection regions in order from the most commonly scribed character (e) to the least

commonly scribed character (z). There is nothing remotely suggestive of this in the Applicants' "counting an amount of tapped landing points." Clearly, Edwin does not teach, either explicitly or implicitly, the Applicants' claimed invention. Likewise, Tappert is silent as to these features of the Applicants' claimed invention. Moreover, neither Edwin or Tappert teach "counting <u>a</u> <u>total</u> amount of tapped landing points <u>only after verification that said spacebar key has been</u> <u>tapped during an inputted sequence of tapped landing points</u>." Therefore, the Applicants' claimed invention is patentable over Edwin in combination with Tappert.

Next, page 8 of the Office Action states that page 24, lines 19-22, page 26, lines 5-11, and the table on page 27 of Edwin teaches the Applicants' "creating a set of words from a lexicon having a same number of said tapped landing points." However, closer scrutiny of Edwin reveals no such teaching. Page 24, lines 19-22 of Edwin merely states, "Once a detection region is touched or crossed (i.e. using rule 1 of the rules of selection), the matching routine would retrieve the data value, data symbol, special character or function that matches the detection region scribed, in combination with any auxiliary keys pressed 360...."

Moreover, page 26, lines 5-11 of Edwin merely states, "To make the matching routine more efficient, the detection regions are stored in the order of the most commonly scribed character to the least commonly scribed character. This most common letter used list could be obtained easily in any preferred or referenced statistic. By using a simple common letter used list to set-up the database this ensures that the matching routine would always match the scribing coordinate/equation with the most likely (most common) detection region first proceeding to the next most likely and so on."

Furthermore, the table on page 27 of Edwin merely provides:

Detection Region	Character
X_1Y_1, X_2Y_2	e (most common)
X_3Y_3, X_4Y_4	t
X_5Y_5, X_6Y_6	a
...	...
$X_{26}Y_{26}, X_{26}Y_{26}$	z (least common)

There is nothing remotely teaching "creating a set of words from a lexicon having <u>a same</u> <u>number</u> of said tapped landing points" as provided by the Applicants' claimed invention. Rather, Edwin merely professes to list the detection regions in order of the most commonly scribed letter (e) to the least commonly scribed letter (z). Likewise, Tappert is silent as to these features of the Applicants' claimed invention. Therefore, the Applicants' claimed invention is patentable over Edwin in combination with Tappert.

Next, page 9 of the Office Action states that page 25, lines 1-2 and 6-9 of Edwin teaches the Applicants' "for each letter in each word in said set, computing a distance from said coordinate to a central position of said key corresponding to said letter." However, a closer reading of Edwin reveals no such teaching. In fact, the relevant portions of Edwin merely states, "FIG. 8 shows how the input routine resolves the scribing motion and allows it to be matched with detection regions (i.e. line detection region).... Line equations are calculated as scribing progresses from X_{n-1} and Y_{n-1} to X_n and Y_n 408 and these line equations are matched during the scribing process 410 with the line detection region's equations to see if any line region is scribed over (i.e. interception between the 2 line equations). There is nothing in the cited portion of Edwin (including FIG. 8 in Edwin) that teaches for each letter in each word in said set, computing a distance from said coordinate to a central position of said key corresponding to said letter" as provided by the Applicants' claimed invention. In fact, Edwin is bereft of any teaching

whatsoever of using the central position of the key as a basis for establishing the distance from the coordinate. Likewise, Tappert is silent as to these features of the Applicants' claimed invention. Therefore, the Applicants' claimed invention is patentable over Edwin in combination with Tappert.

In view of the foregoing, the Applicant respectfully submits that the collective cited prior art do not teach or suggest the features defined by amended independent claims 1, 8, 15, and 22 and as such, claims 1, 8, 15, and 22 are patentable over Tappert alone or in combination with Edwin. Further, dependent claims 2-7, 9-14, and 16-21 are similarly patentable over Tappert alone or in combination with Edwin, not only by virtue of their dependency from patentable independent claims, respectively, but also by virtue of the additional features of the invention they define. Moreover, the Applicant notes that all claims are properly supported in the specification and accompanying drawings. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections.

IV. Formal Matters and Conclusion

With respect to the objections to the drawings, the drawings have been amended, attached hereto as replacement sheets, to overcome these objections. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the objections to the drawings. With respect to the rejections to the claims, the claims have been amended, above, to overcome these rejections. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections to the claims.

In view of the foregoing, Applicants submit that claims 1-22, all the claims presently

pending in the application, are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary. Please charge any deficiencies and credit any overpayments to Attorney's Deposit Account Number 09-0441.

Respectfully submitted,

Dated: <u>April 3, 2007</u>

<u>/Mohammad S. Rahman/</u>
Mohammad S. Rahman
Registration No. 43,029

Gibb & Rahman, LLC
2568-A Riva Road, Suite 304
Annapolis, MD 21401
Voice: (301) 261-8625
Fax: (301) 261-8825
Customer Number: 29154